UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,464	09/19/2003	Thomas E. Creamer	BOC9-2003-0030 (399)	8346

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EXAMINER
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ART UNIT	PAPER NUMBER
2195	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>21 November 2007</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-20</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-20</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>09/19/2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-20 are pending.

Claim Objections

2.   Claims objected to because of the following informalities: claim 1 remove "," from the

end of the line 20 and claim 4 remove "and" from the end of line 4. Appropriate correction is

required.

Specification

3.   The use of the trademark "JAVA" has been noted in this application. It should be

capitalized wherever it appears and be accompanied by the generic terminology.

      Although the use of trademarks is permissible in patent applications, the proprietary

nature of the marks should be respected and every effort made to prevent their use in any manner

which might adversely affect their validity as trademarks.

Claim Rejections - 35 USC § 101

4.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or
> any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and
> requirements of this title.

5.   Claim 20 is rejected under 35 U.S.C. 101 because the claimed invention is directed to

non-statutory subject matter. In claim 20, the preamble claimed "system", is software per se, as

it is not tangibly embodied on any sort of physical medium. The claims recite "means

identifying", "means calculating", "means comparing", "means determining", "means moving",

wherein these "means" limitations are described as being software in the specification. Applicant

is suggested to amend the claims and include hardware ("a processor" or "memory" or

"computer system") in the claim. Appropriate correction required

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

7.   Claims 1, 3-11, 13 and 15-20 rejected under 35 U.S.C. 103(a) as being unpatentable over

Boukobza et al. (Boukobza) US Patent no. 6,122,664, in view of "A mobile-agent-based PC

grid" by Munehiro Fukuda(Fukuda).

8.   As per claim 1, Boukobza teaches the invention substantially as claimed including a

method for restricting resources consumed by ghost agents within a grid computing

environment(col 2, lines 39-53), lines , comprising the steps of:

identifying a host, wherein said host is a software object operating in a grid of said grid

environment (col 3, lines 21-24);

associating a ghost agent within said grid with said host, wherein said ghost agent is

configured to execute at least one operation in said grid, wherein said operation comprises

replicating and recording at least one action of said host within said grid(col 2, lines 22-30; lines 18-20);

calculating a combined resource utilization value for said ghost agent and said host in a current computing resource of said grid, said combined resource utilization value specifying a sum of a total amount of resources required for said host operations and said ghost agent operations in said computing resource(col 2, lines 30-39; col 5, lines 2-4);

comparing said resource utilization value to a usage threshold value for the current computing resource, wherein the usage threshold value defines a maximum resource utilization value permitted by the current computing resource for executing operations of the host (col 2, lines 30-35; col 5, lines 23-29);

determining whether to allow said ghost agent to execute one or more of said operations in the current computing resource responsive to said comparing step such that a combined resource utilization value for the host and the allowed operations does not exceed the usage threshold value(col 2, lines 49-51); and

Boukobza does not specifically disclose moving said host from said grid to another grid within said grid environment; and in response to said moving of said host, moving said ghost agent from said grid to said another grid.

9.   However, Fukuda teaches moving said host from said grid to another grid within said grid environment (page 1, col 1, lines 6-10; page 2, col 2, lines 30-32); and

in response to said moving of said host, moving said ghost agent from said grid to said

another grid (page 2, col 2, lines 7-12).

10.   It would have been obvious to a person of ordinary skill in art at the time of invention

was made to incorporate the teaching of Fukuda into the method of Boukobza to have a ghost

agent moving from one environment to another with the host. The modification would have been

obvious because one of the ordinary skills of the art would have an agent that can move with one

host to be able to record and keep track of all the host activities without any lapse in record.

11.   As per claim 3, Boukobza teaches responsive to determining that no operations of said

agent are to be allowed, deactivating said ghost agent(col 6, lines 47-61; col 5, lines 9-11);

        starting an idle timer(col 6, lines 59-66);

        activating said ghost agent when said idle timer reaches a predetermined time (col 6, lines

56-66).

12.   As per claim 4, Boukobza teaches identifying a first operation that requires a first

quantity of computing resources (col 2, lines 24-39);and

        identifying a second operation that requires a second quantity of computing resources,

wherein said second operation can be performed by said ghost agent in place of said first

operation(col 2, lines 24-39); and

selecting between said first operation and said second operation based upon said comparing step

(col 2 lines 40-46).

13.   As per claim 5, Boukobza teaches storing at least one operation in an operation queue

when said ghost agent is deactivated (col 7, lines 59-64).

14.   As per claim 6, Boukobza teaches executing said stored operation when said ghost agent

is activated (col 7, lines 59-64).

15.   As per claim 7, Boukobza teaches operation queue is disposed within said ghost agent

(col 27 lines 16-19).

16.   As per claim 8, Boukobza teaches a computer-readable storage having stored thereon, a

computer program having a plurality of code sections, said code sections executable by a

computer for causing the computer to perform the steps of:

      providing an interface for associating a ghost agent with a host, wherein said host is a

software object operating in a grid of a grid environment, and wherein said ghost agent is

configured to execute at least one operation in said grid, wherein said operation comprises

replicating and recording at least one action of said host within said grid (col 2 lines 22-30; col 3,

lines 21-24)

      generating a ghost log for recording data relating to said host operating in a computing

resource of said grid (col 5, lines 2-4); and

      managing a ghost controller configured to compare a combined resource utilization value

of said host and said ghost agent in the current computing resource with an established threshold

usage value for the current computing resource, to determine whether to allow said ghost agent to execute one or more of said operations in the current computing resource responsive, and to automatically move said ghost agent within said grid environment, wherein said combined resource utilization value specifies a sum of a total amount of resources required by said host operations and said ghost agent operations in said computing resource, wherein the usage threshold value defines a maximum resource utilization value permitted by the current computing resource for executing operations of the host, and wherein a combined resource utilization value for the host and the allowed operations does not exceed the usage threshold value (col 2, lines 22-39; lines 49-5; col 5, lines 2-4; lines 23-39)

Boukobza does not specifically disclose wherein in response to said host moving from said grid to another grid within said grid environment, said ghost agent is moved from said grid to said another grid to follow the movements of said host.

17.   However, Fukuda teaches wherein in response to said host moving from said grid to another grid within said grid environment, said ghost agent is moved from said grid to said another grid to follow the movements of said host (page 1, col 1, lines 6-10; page 2, col 2, lines 30-32; lines 7-12).

18.   As per claim 9, Boukobza teaches said ghost controller is further configured prevent said ghost agent from executing at least one operation based upon said comparison (col 2, lines 40-46).

19.   As per claim 10, Boukobza teaches managing an operation queue configured to queue

operations for execution by said ghost agent (col 21, lines 6-13).

20.   As per claim 11, Boukobza teaches managing a ghost identifier configured to identify

said ghost agent to components within said grid environment (col 2 lines 30-35).

21.   As per claims13 and 15-19, they have similar limitations as of claims 1 and 3-7 above.

Therefore, they are rejected under the same rational as of claims 1 and 3-7 above.

22.   As per claim 20, it has similar limitations of as of claim 1 above. Therefore, it is rejected

under the same rational as of claim 1 above.

23.   Claims 2 and 14 is rejected under 35 U.S.C. 103(a) being unpatentable over Boukobza et

al. (Boukobza) US Patent no. 6,122,664, in view of "A mobile-agent-based PC grid" by

Munehiro Fukuda(Fukuda), and in view of "Design and Evaluation of Resource Selection

Framework for Grid Application" by Ian Foster(Foster).

24.   As per claim 2, Boukobza and Fukuda does not specifically disclose determining a first

value specifying a usage of a first resource type; determining a second value specifying a usage

of a second resource type; and calculating said resource utilization based on said first value and

said second value.

25.   However Foster teaches determining a first value specifying a usage of a first resource

type (page 3, col 2, lines 19-26);

       determining a second value specifying a usage of a second resource type (page 3, col 2,

lines 19-26); and

       calculating said resource utilization based on said first value and said second value (page

3, col 2, lines 19-26).

26.   It would have been obvious to a person of ordinary skill in art at the time of invention

was made to incorporate the teaching of Foster into the combined method of Boukobza and

Fukuda to have multiple resources with multiple value to compare utilization. The modification

would have been obvious because one of the ordinary skills of the art would have multiple values

of resources for the comparison to have the best resource allocation value for fast processing.

27.   As per claim 14, it has similar limitations as of claim 2 above. Therefore, it is rejected

under the same rational as of claim 2 above.

28.   Claim 12 is rejected under 35 U.S.C. 103(a) being unpatentable over Boukobza et al.

(Boukobza) US Patent no. 6,122,664, in view of "A mobile-agent-based PC grid" by Munehiro

Fukuda(Fukuda), and in view of Putzolu et al.(Putzolu) US Patent No. 6,681,243 B1.

29.   As per claim 12, Boukobza and Fukuda does not specifically disclose disassociating said

ghost agent from said host; and associating said ghost agent with a different host.

30.   However, Putzolu teaches disassociating said ghost agent from said host(col 3, lines 59-

61); and

associating said ghost agent with a different host (col 3, lines 59-61).

31.   It would have been obvious to a person of ordinary skill in art at the time of invention

was made to incorporate the teaching of Putzolu into the combined method of Boukobza and

Fukuda to have a ghost agent associating from one host to another. The modification would have

been obvious because one of the ordinary skills of the art would have an agent that can associate

with one host to another to utilize the agent resource and time.

Response to Argument

32.   Applicant's arguments with respect to claim(s) have been considered but are moot in

view of the new ground(s) of rejection.

Conclusion

33.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

34.   A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

35.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Abdullah-Al Kawsar whose telephone number is 571-270-3169.

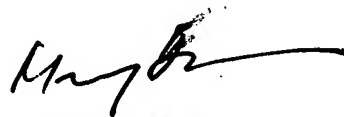The examiner can normally be reached on 7:30am to 5:00pm, EST.

36.   If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Meng Ai T. An can be reached on 571-272-3756. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

37.   Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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